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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,355	02/28/2002	Michiaki Sakamoto	8018-1003	5587

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EXAMINER

WANG, GEORGE Y

ART UNIT PAPER NUMBER

2871

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/084,355

Examiner

George Y. Wang

Applicant(s)

SAKAMOTO ET AL.

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-9 and 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yao et al. (U.S. Patent No. 5,682,211, from hereinafter, "Yao") in view Applicant's Admission of Prior Art (AAPA).

3. As to claim 1 and 15-16, Yao discloses a liquid crystal display (LCD) having a plurality of gate lines (fig. 1, ref. 34) that are parallel to each other, a plurality of data

lines (fig. 1, ref. 32) that are parallel to each other and perpendicular to the gate lines, switching elements (fig. 1, ref. 50) positioned near the intersections of the gate and data lines, a plurality of pixel electrodes (fig. 2, ref. 72) over the gate and data lines with gaps (fig. 2, ref. 712) between the pixel electrodes that at least partially overlap with a gate line, and a plurality of control electrodes (fig. 2, ref. 41) each disposed in the gap between adjacent pixel electrodes and cover the gate line.

However, the reference fails to specifically disclose an LCD with an interlayer insulation film and an opposing active matrix substrate with a liquid crystal layer disposed between the matrix substrates.

AAPA discloses an LCD with an interlayer insulation film (fig. 10, ref. 54) and an opposing active matrix substrate (fig. 10, ref. 64) with a liquid crystal layer (fig. 10, ref. 65) disposed between the matrix substrates.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to dispose an interlayer insulation film, an opposing active matrix substrate, and liquid crystal layer since one would not only recognize these elements as well known in the LCD art but also be motivated to create an integral, functioning LCD with optimized display quality and increased viewing angle (Yao, col. 2, lines 22-36).

4. Regarding claims 2-4, Yao discloses the LCD apparatus as recited above with a control electrode that overlaps with the gap in the width direction, in the region where the gate line and pixel electrode overlap (fig. 2, ref. 710).

Art Unit: 2871

5. As to claims 5-8 and 17, Yao discloses the LCD device as recited above where the control electrode has the same potential voltage as that of the source electrode of the switching element (col. 3, lines 56-67). Furthermore, Yao teaches the control electrode on the same layer and integrally formed with the source electrode (fig. 2, ref. 41, 40).
6. As per claim 9, Yao discloses the LCD apparatus as recited above where the control electrode has a multilayer structure (fig. 2, ref. 41) comprising of metal (fig. 2, ref. 66, 62).
7. Regarding claims 13-14 and 18-19, Yao disclose the LCD device as recited above where the control and source electrode are coupled via an extension to the contact hole (fig. 1, ref. 58) to the pixel electrode.
8. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yao and AAPA in view of Akiyama et al. (U.S. Patent No. 5,986,724, from hereinafter "Akiyama").

Yao and AAPA disclose the LCD device as recited above, however, the references fail to specifically disclose an interlayer insulating film made of organic film. Furthermore, the references fail to specifically teach the LCD having a COT structure or a reflection type LCD.

Art Unit: 2871

Akiyama discloses a reflective type LCD (col. 1, lines 19-25) with an interlayer insulating film that is organic (col. 22, lines 7-11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used an organic interlayer insulating film since one would be motivated by its light-absorbing qualities (col. 22, lines 7-11) as well as its high compatibility. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a reflection type structure since one would motivated to eliminate the need for back light and ultimately reduce power consumption (col. 1, lines 19-25). In addition, it would have been obvious to one of ordinary skill in the art to have equally used because Applicant has failed to address any particular advantage of such a structure and because a COT structure is functionally equivalent to a reflection type LCD and serves the same purpose.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Y. Wang whose telephone number is 703-305-7242. The examiner can normally be reached on M-F, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Application/Control Number: 10/084,355

Page 6

Art Unit: 2871

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

A handwritten signature, possibly reading "JH", is located to the right of the main text block.

gw
July 10, 2003